

Amendments to the Claims

Claim 1 (Currently Amended): An isolated SABP2 nucleic acid molecule comprising a sequence selected from the group consisting of:

- a) SEQ ID NO: 1;
- b) a sequence encoding a the polypeptide of SEQ ID NO: 2;
- c) a the complement of SEQ ID NO: 1; and
- d) a homolog of a sequence selected from the group consisting of a), b), and c).

Claim 2 (Original): The isolated nucleic acid molecule of claim 1, wherein said SABP2 nucleic acid molecule comprises SEQ ID NO: 1.

Claim 3 (Original): The isolated nucleic acid molecule of claim 1, wherein said SABP2 nucleic acid molecule comprises a sequence encoding SEQ ID NO: 2.

Claim 4 (Original): A cDNA produced by reverse transcription of an mRNA encoded by the nucleic acid molecule of claim 1.

Claim 5 (Original): An RNA molecule encoded by the SABP2 nucleic acid molecule of claim 1.

Claim 6 (Original): An expression vector comprising the nucleic acid molecule of claim 1.

Claim 7 (Currently Amended): ~~An~~ The expression vector of claim 6 wherein said vector is selected from the group of vectors consisting of plasmid, cosmid, baculovirus, bacteria, yeast and viral vectors.

Claim 8 (Currently Amended): The host cell transformed with an expression vector of claim 6.

Claim 9 (Original): A host cell of claim 8, wherein said host cell is selected from the group consisting of tobacco, Arabidopsis, rice, maize, wheat, soybean, tomato, potato, barley, canola, bacteria, yeast, insect and mammalian cells.

Claim 10 (Withdrawn): An isolated SABP2 polypeptide encoded by the SABP2 nucleic acid molecule of claim 1.

Claim 11 (Withdrawn): The isolated SABP2 polypeptide of claim 10, which encodes an enzyme with a function selected from the group consisting of lyases, lipases, and esterases, wherein loss of function of the enzyme in a plant results in altered resistance of the plant to plant pathogens or other disease-causing agents.

Claim 12 (Withdrawn): An antibody immunologically specific for at least one epitope of an SABP2 polypeptide encoded by the SABP2 nucleic acid of claim 1.

Claim 13 (Withdrawn): A method for identifying agents which modulate the function of SABP2 or a SABP2 homolog in a host cell, comprising the steps of:

- a) introducing an SABP2 encoding nucleic acid as claimed in claim 1 into said host cell;
- b) treating said host cell with at least one agent suspected of modulating SABP2 or SABP2 homolog function; and
- c) assaying SABP2 or SABP2 homolog function in the presence and absence of said agent in said host cell or extracts thereof.

Claim 14 (Withdrawn): The method of claim 13, wherein said agent has binding affinity for said SABP2 or SABP2 homolog.

Claim 15 (Withdrawn): The method of claim 13, wherein said agent modulates SABP2 or SABP2 homolog enzymatic activity.

Claim 16 (Withdrawn): The method of claim 13, wherein said agent modulates SABP2 or SABP2 homolog expression levels.

Claim 17 (Withdrawn): The method of claim 13, wherein said SABP2 or SABP2 homolog is isolated from said cell, and said assaying is performed *in vitro*.

Claim 18 (Withdrawn): The method of claim 13, wherein treatment of a plant with said agent produces increased resistance to plant pathogens or other disease causing agents in said plant.

Claim 19 (Withdrawn): A method as claimed in claim 13, wherein said agent is a salicylic acid analogue.

Claim 20 (Withdrawn): A method as claimed in claim 13, wherein said SABP2 or SABP2 homolog is affixed to a solid support.

Claim 21 (Cancelled)

Claim 22 (Withdrawn): A method as claimed in claim 13, wherein said SABP2 homolog is encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 31-49.

Claim 23 (Withdrawn): The method as claimed in claim 13, wherein said SABP2 homolog is encoded by SEQ ID NO:36.

Claim 24 (Currently Amended): A method to enhance resistance of a plant to plant pathogens or other disease causing agents comprising overexpressing an SABP2 nucleic acid molecule of claim 1 in a plant cell of said plant, wherein said overexpression of said SABP2 nucleic acid molecule enhances the resistance of said plant to plant pathogens or other disease causing agents.

Claim 25 (Original): The method of claim 24, wherein said nucleic acid molecule comprises SEQ ID NO:1.

Claim 26 (Original): The method of claim 24, wherein said nucleic acid molecule comprises SEQ ID NO:36.

Claim 27 (Currently Amended): The method of claim 24, wherein resistance to plant pathogens or other disease causing agents is further enhanced by addition of an agent identified by ~~the method of claim 13~~ a method comprising the steps of:

a) introducing said SABP2 nucleic acid molecule into a host cell;

b) treating said host cell with at least one agent suspected of modulating the function of said SABP2; and

c) assaying SABP2 function in the presence and absence of said agent in said host cell or extracts thereof.

Claim 28 (Original): A transgenic plant comprising the nucleic acid molecule of claim 1.

Claim 29 (Original): The transgenic plant of claim 28, wherein said plant is fertile.

Claim 30 (Original): The transgenic plant of claim 28, wherein said plant has increased resistance to disease.

Claim 31 (Original): The transgenic plant of claim 28 wherein said nucleic acid molecule comprises SEQ ID NO: 1.

Claim 32 (Currently Amended): The transgenic plant of claim 28 wherein said nucleic acid molecule comprises a heterologous nucleic acid sequence of SEQ ID NO: 36.

Claim 33 (Withdrawn): A method to inhibit function of SABP2 or

a SABP2 homolog in a plant, said method comprising the introduction of a mutated SABP2 or SABP2 homolog-encoding nucleic acid into said plant, said mutated SABP2 or SABP2 homolog-encoding nucleic acid encoding a non-functional SABP2 or SABP2 homolog protein.

Claim 34 (Withdrawn): The method of claim 33, wherein said mutated SABP2 or SABP2 homolog-encoding nucleic acid inhibits expression of SABP2.

Claim 35 (Withdrawn): The method of claim 33, wherein said mutated SABP2-encoding nucleic acid encodes an antisense molecule of SEQ ID NO: 1.

Claim 36 (Withdrawn): The method of claim 33, wherein said mutated SABP-2 encoding nucleic acid comprises an intron-containing double stranded RNA segment of SEQ ID NO: 1.

Claim 37 (Withdrawn): The method of claim 33, wherein said mutated SABP2 homolog-encoding nucleic acid encodes an antisense molecule of SEQ ID NO: 36.

Claim 38 (Withdrawn): The method of claim 33, wherein said mutated SABP2 homolog-encoding nucleic acid comprises an intron-containing double stranded RNA segment of SEQ ID NOS: 36.

Claim 39 (Withdrawn): A transgenic knock-out plant wherein expression of SABP2 or a SABP2 homolog has been significantly reduced relative to wild-type non-transgenic plants.

Claim 40 (Withdrawn): The plant of claim 39, which is fertile.

Claim 41 (Withdrawn): A method for screening functional homologs of SABP2 to identify orthologs thereof, comprising:

- a) providing a predetermined amount of SABP2 homolog;
- b) determining level of binding affinity for salicylic acid in the presence and absence of analogs thereof;
- c) determining level of esterase/lipase activity of said homolog;
- d) determining level of esterase/lipase activity in the presence and absence of salicylic acid;
- e) altering expression of said SABP2 homolog in a transgenic plant and determining whether such alteration modifies defense responses to pathogen infection; and
- d) those homologs having SA binding affinity which is displaced by SA analogs, possessing esterase/lipase activity which is altered by salicylic acid and which, upon introduction into a host plant, modify defense responses to pathogen infection being identified as functional orthologs of SABP2.

Claim 42 (Withdrawn): The method of claim 41, wherein said SABP2 homologs are encoded by a nucleic acid selected from the group consisting of SEQ ID NOS: 31-49.

Claim 43 (Withdrawn): The method of claim 41, wherein said SABP2 homolog is SEQ ID NO: 36.

Claim 44 (New): The method of claim 24, wherein said overexpression of said SABP2 nucleic acid molecule comprises transforming the plant cells of said plant with said nucleic acid molecule of claim 1.

Claim 45 (New): The method of claim 26, wherein said overexpression of said SABP2 nucleic acid molecule comprises transforming the plant cells of said plant with said nucleic acid molecule of SEQ ID NO: 36.

Claim 46 (New): The nucleic acid molecule of claim 1, wherein

said nucleic acid comprises SEQ ID NO: 40.

Claim 47 (New): The method of claim 24, wherein said nucleic acid molecule comprises SEQ ID NO: 40.

Claim 48 (New): The method of claim 47, wherein said overexpression of said SABP2 nucleic acid molecule comprises transforming the plant cells of said plant with said nucleic acid molecule of SEQ ID NO: 40.

Claim 49 (New): The transgenic plant of claim 28 wherein said nucleic acid molecule comprises a heterologous nucleic acid sequence of SEQ ID NO: 40.

Claim 50 (New): The nucleic acid molecule of claim 1, wherein said homolog is an ortholog.